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Research Article

Determinants of Discontinuation of Contraceptive Methods among Women at Kenyatta National Hospital, Kenya

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Background: Contraceptive use prevalence in Kenya is at 58% according to the 2014 Kenya Demographic Health Survey. Several factors lead to discontinuation and switch of contraceptives. Discontinuation rate as per the 2008/2009 KDHS for one year was 35.8%.

Objectives: To find out the determinants of discontinuation and switching of hormonal and IUD contraceptive methods.

Methodology: The study was a cross-sectional hospital based one, where data was collected by use of an interviewer administered questionnaire at Kenyatta National Hospital, where 400 women were interviewed. The data was then analyzed by use of the statistical software, SPSS Version 20.

Results: The study population mainly comprised married women with a mean age of 31.45±6.40 years. Most women chose a contraceptive method which they perceived had the least adverse effects. Discontinuation rate by the time of study in the study population was 60.8%, with adverse effects as the most cited reason for discontinuation. The method of contraception and presence of co-morbidity were the factors associated with discontinuation of a contraceptive. Survival analysis showed that depot injection and Jadelle® (Levonorgestrel releasing implant 75mg) had the highest median months of use and Impanon® (Etonogestrel implant 68mg) the least.

Conclusion: The reasons for discontinuation of contraceptive use include primarily concerns for adverse effects, use inconvenience, desire for pregnancy, contraceptive failure, and doctor's advice.

Key words: contraceptive discontinuation, adverse effects, duration of use

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1. Introduction

Contraception is avoidance of pregnancy by different methods other than avoiding coitus or hysterectomy (Monga et al, 2011). A contraceptive is a drug or device that prevents or may prevent fertilization, thus preventing the formation of an embryo. An ideal contraceptive method should be easy to use, affordable, easily distributed, safe with no side effects, highly effective, rapidly reversible, widely available, acceptable, independent of intercourse, and requiring minimal monitoring during use (Kristen, 2013, Hatcher et al, 2007). However, there is no single method of contraceptive which will meet all the ideal characteristics.

Contraceptives are of various classes based on their composition or mode of action. The available classes of contraceptives are hormonal contraceptives, intrauterine contraceptives, barrier methods, natural family planning methods and sterilization also known

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as permanent methods of contraceptives (U.S Food & Drug administration, 2014).

Contraceptive discontinuation and switching is common as the need for contraceptives may change with time. Several factors could lead to contraceptive discontinuation or switch to a different one. The factors include adverse drug events, health risks, contraceptive failure, need for pregnancy, infrequent sexual intercourse, menopause, need for a more effective method, use inconvenience, lack of access, unaffordability or opposition from one's spouse (Hatcher et al, 2007; John, 2012; Hilary, 2009). A study done in Bangladesh showed that half of women who initiate use of a contraceptive method discontinue it within an year and slightly above of two third (69%) discontinue it within two years of use (Syeda et al, 2007). According to the KDHS 2008/09, one year discontinuation rate in Kenya was 35.8%...

The Kenya Demographic Health Survey of 2008/2009 showed that contraceptive discontinuation rate for one year is 35.8%. The reasons for the discontinuation were not indicated. The prevalence of unintended pregnancy among married women is at 43%. This could be attributed to the high discontinuation rate of contraceptives. An analysis of the 2003 Kenyan DHS showed that 50.7% of the women who discontinued use of contraceptives were at risk of pregnancy three months after (John, 2012). Unwanted pregnancies contribute to large sizes of families which are not planned for and also illegal abortions which contribute to maternal mortalities.

Studies on discontinuation of contraceptives have not been extensively done in Kenya. An analysis of the same was done on KDHS data for the year 2008/09 but it did not capture the reasons behind the discontinuation. There is no study that has been done locally to determine the factors for the discontinuation and switching of contraceptive methods from one to another.

The study will seek to establish the common reasons as to why women on hormonal contraceptives and IUDs discontinue or switch to other methods. It will also seek to find out the rate of discontinuation and switch within the study period. This will create awareness on the common reasons why women discontinue or switch from these contraceptive methods. This may help in creation of policies and strategies on which contraceptives should be mostly availed, and in counseling during initiation in order to address these determinants. Addressing the issues that would lead to discontinuation of contraceptive use will ensure better use hence prevention of unwanted pregnancies, which in turn would lead to reduction in abortion cases and maternal mortality. The study may also inform policy on the management of adverse effects associated with the contraceptives leading to their discontinuation.

2. Methodology

2.1 Study Site, Study Design and Population

The study was carried out at the Kenyatta National Hospital's Specialized Reproductive Health Clinic where outpatient contraceptive services are offered. The study was a cross-sectional study which involved use of an interviewer administered questionnaire. This was carried out with the months of May and June 2015. The study population comprised of women aged 18-49 who were seeking contraceptive and reproductive health services within the study location.

2.2 Inclusion and Exclusion Criteria

Women of reproductive age (18-49 years), within the study location and on a contraceptive method within the study period, who consented to the study, were included. Women who were expectant, post-menopausal or not on any hormonal or IUD methods of contraception and also women who did not consent to the study, were excluded from the study.

2.3 Sample Size and Sampling Criteria

The sample size calculation was based on the Kenya Demographic Health Survey of 2008/2009, where one year contraceptive discontinuation rate in Kenya was 35.8 %. Fischer formula was applied, with confidence intervals set at 95% and degree of precision at 5%. The sample size was determined to be 400 women. Universal sampling method was applied whereby every woman who met the inclusion criteria was included in the study till sample size was achieved.

2.4 Data Collection

Clients were recruited within the Specialized Reproductive Health Clinic (Clinic 66), every Monday to Friday, between 8.00 am and 5.00 pm. The participants who met the inclusion criteria and gave consent were recruited to the study. A face to face interview using an interviewer administered questionnaire was conducted. The information recorded included socio-demographic information, contraceptive use, discontinuation and switch and reasons for discontinuation

2.5 Data Analysis

A database was created using Epi Info. Version 7, for storage of all the data collected. The data was then analyzed by use of SPSS software Version 20. Analysis of numerical data through descriptive and inferential statistics was done. Descriptive data analysis was determined for the various variables and it was presented as mean, mode, median, frequencies, ranges and percentile. Exploratory data analysis which involved regressing the independent variables such as the demographic data, adverse effects, affordability against the dependent variables which are discontinuation rates and switching.

2.6 Ethical Consideration

Approval to carry out the study was sought from the KNH/UON Ethics and Research Committee, which was done under reference number **KNH-ERC/A/157**. Permission was also sought from the nursing officer in-charge of Clinic 66.

Informed consent was sought from identified clients who met the inclusion criteria. Participants were required to consent in writing before being recruited to the study.

3. Results and Discussion

3.1 Sample Characteristics

The mean age of the participating clients was 31.45 years with a range of 20 to 49 while the mean weight was 67.95 kg with a standard deviation of 11.76. This is a little different from the findings of KDHS 2014 where the highest percentage of those who participated was ages 25-29. This could probably be due to different study site and study demographics. The mean age is comparable to the findings of a study done at the Kenyatta National Hospital-Comprehensive Care Clinic (KNH-CCC), on contraceptive use among HIV infected women, where the mean age was 34 (Mutiso et al, 2008).

The respondents who were married were 93.3%, while the minority were either never married or separated/divorced (**Table 1**). This is comparable to the participants of the KDHS 2014 where majority were married and the minority were either divorced/separated or widowed. The respondents who had received secondary school education were 44%, 31.8% had gone through tertiary education and 23.5% had only primary level education. Only 8% had not received any education. This is a little different with the findings of the KDHS 2014 where only 42.7% had secondary school or tertiary education. This can probably be attributed to the different study sites and study demographics where the KDHS study has a representative sample for the whole country while this study was only done in a clinic in KNH.

The participants who were unemployed were 35.8%, 33.1% were self-employed and 8.3 % were in informal employment which is similar to other studies (Mutiso et al, 2008). Majority of the women (65.3%) had 1-2 children, while only 2% had more than 4 children; this is comparable to a similar study conducted at KNH where most participants had 1-2 children (Nkonge et al, 2014). Most of the participants were Christians and only 0.8 % were Muslims and no other religion was represented, which is comparable to the KDHS 2014 findings where majority of the participants, 91.45 % were Christians.

Only 7.1% of the study participants had co-morbid conditions of which hypertension was the highest at 3.0%, asthma at 1.75% and diabetes mellitus at 0.8%. This is similar to findings of a study done within KNH on knowledge of correct use among hormonal contraceptive users, which found the prevalence of hypertension among its participants at 2.5%, diabetes mellitus at 0.8% and asthma at 0.5% (Nkonge et al, 2014). Data on co-morbidity is important in characterizing the population of study and also to determine how it affects the discontinuation of contraceptives.

Table 1: Socio-demographic Characteristics of the Study Population

Characteristic	Category	Frequency % (n)
Marital status	Single	5.5 (22)
	Married	93.3 (373)
	Divorced/Separated	1.3 (5)
Highest level of education	None	0.8 (3)
	Primary	23.5 (94)
	Secondary	44.0 (176)
	Tertiary	31.8 (127)
Employment status	Unemployed	35.8 (143)
	Informal employment	8.3 (33)
	Formal employment	22.8 (91)
	Self-employed	33.1 (132)
Parity	0	2.0 (8)
	1-2	65.3 (261)
	3-4	30.8 (123)
	>4	2.0 (8)
Religious affiliation	Christian	99.2 (395)
	Islam	0.8 (3)

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3.2 History of contraceptive use

Combined oral contraceptives were being used by 29% of the study participants at the time of the study, 25% were using depot injection while both implants and IUD were at 22% in usage. (**Table 2**). This is quite different from the findings of the KDHS 2014 where oral contraceptive pills were being used by 8%, injectables usage was at 26.4%, implants at 9.9% and IUD at 3.4%. Other studies show injectables as the most used among the hormonal contraceptives, followed by oral contraceptive pills and then implants (Nkonge et al, 2014). The disparity could be due to the different study locations and different study objectives.

Table 2: Current Contraceptives in Use

Current contraceptive	n	%
Combined Oral pills	117	29%
Depot injection	98	25%
Jadelle	48	12%
Implanon	39	10%
IUD	89	22%

Majority of the women, who were using combined oral contraceptives (65.5%), cited least adverse effects as the reason for choosing it and only 5.9% gave use convenience as a reason for choosing the method (**Table 3**). Other women who were using depot injection (43.9%), gave use convenience as the reason for choosing it and only 3.1% used it because it was most available or due to doctor's advice. The implants, Jadelle® and Implanon® were mainly used due to use convenience. Most of the IUD users chose the method because of least adverse effects (59.3%). Other reasons given for choosing the current contraceptives in use included advice by their peers, most preferred by spouse among others.

Least adverse effects were the major reason why most women chose their current method of contraception, which was followed by use convenience (**Table 3**). Affordability or availability of a contraceptive method was a very minor reason for choosing a certain method of contraception which could be due to the fact that Government facilities are the main sources of contraceptives in Kenya, which is given at a very subsidized cost (KDHS 2008/2009; Nkonge et al, 2014). The reasons for choosing current methods of contraception are similar to those given in other studies (Nkonge et al, 2014).

Table 3: Reasons for Choosing the Contraceptive in Use

Current contraceptive	Most effective	Use convenience	Least adverse effects	Most available/ affordable	Doctor's advice	Others (specify)
	% (n)	%(n)	%(n)	%(n)	%(n)	%(n)
Oral pills	6.7(8)	5.9(7)	65.5(78)	5(6)	15.1(18)	0(0)
Depot injection	7.1(7)	43.9(43)	40.8(40)	3.1(3)	3.1(3)	1(1)
Jadelle	18.8(9)	47.9(23)	31.3(15)	0(0)	4.2(2)	0(0)
Implanon	10.3(4)	64.1(25)	20.5(8)	0(0)	0(0)	2.6(1)
IUD	6.6(6)	14.3(13)	59.3(54)	0(0)	19.8(18)	2.2(2)
Total	8.8(35)	28(111)	49.2(195)	2.3(9)	10.4(41)	1(4)

Table 4: Reasons for Discontinuing Previous Contraceptive Methods

	Adverse effects	Contraceptive failure	Desire for more children	Inconvenient to use	Spouse disapproval	Not affordable/ available	Doctor's advice	Other
Method	**N**	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**
Oral pills	63 (51%)	5 (4%)	6 (5%)	49 (40%)	0 (0%)	0 (0%)	0 (0%)	1 (1%)
Depot inj.	75 (79%)	1 (1%)	8 (8%)	8 (8%)	0 (0%)	0 (0%)	0 (0%)	3 (3%)
Jadelle	26 (76%)	0 (0%)	4 (12%)	1 (3%)	0 (0%)	0 (0%)	1 (3%)	2 (6%)
Implanon	14 (78%)	1 (6%)	2 (11%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (6%)
IUD	9 (60%)	2 (13%)	4 (27%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
TOTAL	187 (65.4%)	9 (3.14%)	24 (8.4%)	58 (20.28%)	0(0%)	0(0%)	1(0.35%)	7(2.45%)

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Among the interviewed women, 60.8% had used more than one contraceptive method by the time of the study. This is comparable to an analysis done from 60 demographic and health survey; in 19 countries by WHO which found that 64% of women discontinue using reversible methods of contraceptives by 36th month (Mohammed et al, 2012). Another DHS analysis of 20 studies for the USAID found that discontinuation rate within the first year of use was 18-63% (Sarah et al, 2009). Other studies show similar discontinuation rates (Wethoff et al, 2007).

3.3 Reasons For Discontinuing Contraceptive

Majority of the women, who discontinued using a particular method of contraceptive, did so due to adverse effects. Among those who discontinued using depot injection, 79% did so due to adverse effects, the same as 78% of Implanon® users, 76% of Jadelle® users, 60% of IUD users and 51% of Oral pill users. None of those who discontinued use of the methods cited neither spousal disapproval nor affordability/unavailability as the reason for discontinuation and only 3% of those who discontinued use of Jadelle® gave doctor's advice as the reason. Use inconvenience was never a reason among those who discontinued use of Implanon® or IUD, but was the reason among 40% of those who stopped using Oral pills (**Table 4**).

The major reason that would make the women discontinue on their current contraceptive was adverse effects at 49.5%, followed by desire for more children at 36.0%. Unaffordability or unavailability was never a reason that would make a woman discontinue their contraceptive method.

3.4 Duration of Use Before Discontinuation

Survival analysis was done as an alternative way to represent all-cause discontinuation of contraceptive use. The median length of use which represents the length of time by which half of the women have stopped using a certain contraceptive method was calculated for the four methods as shown in **Table 5**. Duration of use of the contraceptives varied across the methods. The longest users were the depot injection users, mean months of usage of 41 followed by oral pills and IUD users with mean months of usage at 32. Implanon® had the lowest mean months of usage which was at 16. Depot injection users indicated the longest mean months of intended use (86), when asked for how long they were intending to be on the current method of contraceptive. This was followed by IUD users who had mean months of intended use as 84. Implanon® users gave the lowest intended mean months of use, 52 followed by oral pill users whose mean was 61.

Methods of contraceptives used before the study and their use duration before discontinuation are presented in **Table 6**. Method 1 is the very first contraceptive method that the study participants used as reported in the interview, method 2 is the second method they use and for those who used more than two methods, method 3 is their third method of use. Women use Oral pills, depot injection and IUD for a longer period if it's the very first method of contraception they are using than if it's the second method of contraception. Impalnts (Jadelle® and Implanon®) were used for longer duration if they are used as second or third methods of contraception as compared to when they are use as the first method.

When IUD is used as the first method of contraception, it had the highest median length of use (60 months), followed by Jadelle® while Implanon® had the least median length of use. Jadelle® had the highest length of use when used as a second method of contraception, followed by Implanon and Oral Contraceptive pills had the least median length of use. A WHO analysis of several DHS (including Kenya 2003 DHS) on causes and consequences of contraceptives discontinuation showed similar results with IUD having the highest median length of use (40 months) and depot injection the lowest, though it did not include implants (Jadelle® and Implanon®) in the study (Mohammed et al, 2012). This can be due to the fact that IUD is a long term method of contraception, and can be effective for over ten years once inserted.

3.5 Factors influencing Discontinuation of Contraceptive Use

Bivariate analysis was done through logistic regression, to determine how several factors affected the discontinuation of contraceptives. Marital status, level of education, religious affiliation, employment status and parity were all not associated with discontinuation of contraceptives. It was only co-morbidity and the method of contraception that were associated with discontinuation of contraceptive use (P-value = 0.001 & <0.0001 respectively). This is different from a similar study carried out in Pakistan in 2012, which showed that family size (parity) is strongly associated with discontinuation of contraception (Farwa, 2012). The difference in findings could be due to the different study populations and probably different study design and objectives.

Table 5: Duration of Use of Current Contraceptives in Months

Current contraceptive on use	Mean	Median	Minimum	Maximum
Oral pills	32	13	1	144
Depot injection	41	24	1	132
Jadelle	27	24	2	96
Implanon	16	12	1	60
IUD	32	16	1	120

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Table 6: Previous use of contraceptives and their duration of use

Duration of use (months)		Oral pills	Depot injection	Jadelle	Implanon	IUD
Method 1	Mean	31	25	36	15	44
	Median	12	12	36	10	60
	Minimum	1	3	4	2	8
	Maximum	120	120	96	36	72
	Standard Deviation	33	29	25	12	28
Method 2	Mean	24	13	53	29	8
	Median	3	9	60	30	8
	Minimum	1	3	1	18	5
	Maximum	138	60	120	36	12
	Standard Deviation	50	14	44	9	3
Method 3	Mean	-	-	72	-	-
	Median	-	-	60	-	-
	Minimum	-	-	36	-	-
	Maximum	-	-	120	-	-
	Standard Deviation	-	-	43	-	-

Multivariate analysis on model building showed that only co-morbidity had a significant association with discontinuation of the contraceptives, with a P=0.001 and an Odds Ratio of 3.582 (1.637-7.840), which means that the presence of a co-morbid condition increases the odds of discontinuing a contraceptive method by 3.6 times.

4. Conclusion

Multiple reasons for discontinuation of contraceptive use include primarily concerns for adverse effects, use inconvenience, desire to become pregnant, contraceptive failure, and doctor's advice. Spousal disapproval and unaffordability or unavailability are not determinants of discontinuation of contraception use. Presence of a co-morbid condition on the user and the method of contraception are the statistically significant factors when it comes to discontinuation of contraceptives.

Reproductive Health programs that deal with contraceptives need to come up with more detailed programs that address the high levels of discontinuation of contraception use by women who are still in need. Family planning programmers and stakeholders need to identify women who strongly want to avoid pregnancy and find ways to help the couples successfully initiate and maintain appropriate contraceptive use. The factors underlying the discontinuations need to be addressed thoroughly during the inception of contraceptive services, and counseling continued at each visit for the services. Deliberate rigorous screening for comorbid conditions should be carried out regularly and the client advised accordingly by the medical personnel.

More studies need to be done to determine the temporal relationship between hormonal contraceptive use and onset of the comorbid conditions. Larger studies on the adequacy of contraceptive services and client satisfaction with the methods also need to be carried out. Studies following those who discontinue use of contraceptives while still in need of the services need to be done to find out what the outcomes are.

Conflict of Interest Declaration

The authors declare no conflict of interest.

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